Preventing Pollution at Rock Quarries

A Guide to Environmental Compliance and Pollution Prevention for Quarries in Missouri

MISSOURI DEPARTMENT OF NATURAL RESOURCES
Technical Assistance Program
(800) 361-4827

PUB000340

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For more information call (800) 361-4827 or write to
Missouri Department of Natural Resources
Technical Assistance Program
P.O. Box 176
Jefferson City, MO 65102-0176

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Preventing Pollution At Rock Quarries

- Guide Sheet #1

As environmental protection becomes more and more important across the nation, industries of every type are faced with some big questions --

What environmental regulations apply to me and my facility?
How do I comply with those regulations?
Are there things I can do to reduce the regulations I must comply with?
How can I protect myself from fines and liability?
How do I protect myself and my workers from environmental hazards at my business?

This publication can help owners and operators of limestone quarries in Missouri answer some of those questions. The guide sheets provide basic information about regulatory requirements and suggestions for protecting yourself, your workers and the environment through pollution prevention.

Each guide sheet in this publication deals with a separate issue that you may face at your quarry. The guides will not answer every question you have. After reviewing them you should be able to decide if you need more information or assistance on a particular issue. The topics are listed on the back of this page.

The Missouri Department of Natural Resources (DNR) has a Technical Assistance Program (TAP) to help people comply with environmental regulations and find ways to prevent pollution. If you need assistance, call TAP at (800) 361-4827.

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Guide Sheets for Rock Quarries

404 Permits and Wetlands
Air Quality Permits
Antifreeze
Endangered Species
EPCRA and Tier II Reports
Hazardous Wastes
Lead-Acid Batteries
Mineral Exploration Test Holes
Pollution Prevention
Reclamation
Petroleum Storage Tanks
Used Oil Disposal and Recycling
Used Oil Storage
Waste Tires
Wastewater

If you have comments or suggestions for ways to improve these guide sheets, please let us know by calling TAP at (800) 361-4827.

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POLLUTION PREVENTION

Rock quarry and stone operations deal with many things that can affect the environment. Materials such as dust, contaminated storm water and used oil can harm the environment and people if they are not properly managed. State and federal environmental regulations explain what legally can and cannot be done with these materials. The regulations describe how pollution should be controlled, stored, treated or disposed. A better solution is to prevent the waste or pollution.

WHAT IS POLLUTION PREVENTION?

Pollution prevention is simply not making the waste or pollutant in the first place. It means doing what we can to reduce the amount and toxicity of the pollution we generate. Preventing pollution may be something as simple as using a catch-basin to prevent spills, or something as complex as redesigning your operation to increase efficiency and reduce waste. Simple things like choosing non-hazardous solvents can protect the environment and reduce the number of environmental regulations you face. Pollution prevention means thinking about the environmental impact of your actions, and trying to limit that impact.

WHY PREVENT POLLUTION?

When we generate waste or pollution, we must safely and legally manage that waste or pollution. Whether it is household trash or waste from a business, managing wastes costs money. And usually the things we discard are materials we paid for when we got them. A good example is paper towels. We buy them, use them once, then pay again to have them disposed. If we reduce the amount of waste we generate, we save money. It's as simple as that. Reducing costs is a major reason to prevent pollution. Here are a few others:

- ✔ Improved work environment and worker safety.
- ✔ Reduced liability.
- ✔ Increased efficiency.
- ✔ Fewer regulatory requirements.
- ✔ Better environmental protection.
- ✔ Enhanced marketing and public relations opportunities.

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WHAT CAN BE DONE AT LIMESTONE QUARRIES?

There are many ways to prevent pollution at limestone quarries. In addition to the quarrying activities, maintenance and repair of vehicles and machinery can create wastes as can office operations. Each of the guide sheets has suggestions on ways to prevent pollution, but here are a few general tips:

- √ Keep work areas clean and well organized to help prevent accidents.
- √ Use drip pans and splash guards where spills frequently occur.
- √ Fix leaks immediately.
- √ Purchase the largest practical container (containers usually end up as waste), but don't purchase more than you need.
- √ Purchase the least toxic or hazardous product available. Check the material safety data sheets for products you purchase. If the product is toxic or hazardous, ask your supplier for alternatives.
- √ Use the oldest items first (first-in, first-out).
- √ If you do have excess or unneeded materials, see if your supplier can take them back
- √ Include the cost of disposal when you make purchasing decisions. What looks like thecheapest option may cost more because of disposal or other management costs.
- √ Store materials in a way that keeps them from being damaged.
- √ Inspect storage areas regularly for leaks.
- √ Make sure all items are clearly labeled. Store products in original containers.
- √ Store wastes separately and be sure they are properly labeled to make it easier to reuse or recycle them.
- √ Store items that could leak in a place where leaks will be contained and easily spotted.
- √ Make a list of your wastes. Then try to find a way to eliminate each of them. For example, if you throw away paper towels, consider using washable shop rags.

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404 PERMITS AND WETLANDS

Under Section 404(a) of the Clean Water Act, you must get a permit from the U.S. Army Corps of Engineers (Corps) before putting dredged or fill materials into any "waters of the United States" (U.S.). This includes waters used (or usable) as habitat by certain birds or endangered species or used to irrigate crops sold in interstate commerce.

The following are not generally considered "waters of the U.S.":

- ✔ Non-tidal drainage and irrigation ditches
- ✔ Artificially irrigated areas
- ✔ Some small ponds
- ✔ Artificial reflecting or swimming pools
- ✔ Water-filled depressions **except** that water-filled depressions such as those formed from quarrying can be "waters of the U.S." if the construction or excavation operation is abandoned or completed and the body of water meets the definition of "water of the U.S." or the site has become a wetland.

The Corps and the Environmental Protection Agency (EPA) can designate a particular waterbody as a "water of the U.S." on a case by case basis.

The Corps and the EPA define wetlands as "Those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. Wetlands generally include swamps, marshes, bogs, and similar areas."

The Corps determines whether an area is a wetland and if an activity requires a permit. The determination is based on vegetation, soil and hydrology. Before issuing a 404 permit, the Corps will work with DNR to get a water quality certification called a 401. This certification is required under Section 401 of the Clean Water Act and state law.

There are five U.S. Army Corps of Engineers Districts in Missouri. Use the map on the back of this sheet to find out which office to contact for more assistance.

REMEMBER

If you plan to excavate or fill in waters of the U.S., including wetlands, you must contact the U.S. Army Corps of Engineers and get any necessary permits BEFORE you begin.

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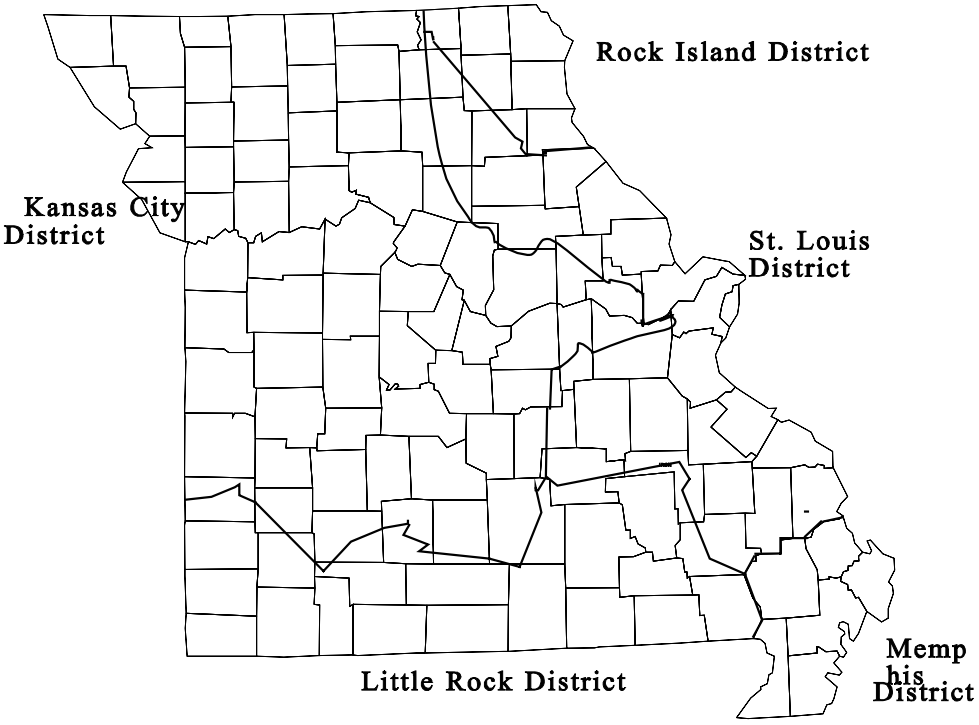
U.S. Army Corps of Engineers District Boundaries (approximate)



Kansas City District
700 Federal Bldg., 601 E. 12th St.
Kansas City, MO 64106-2896
(816) 983-3990

Glasgow Regulatory Field Office
(660) 338-2323
Jefferson City Regulatory Field Office
(573) 634-4788
Truman Regulatory Field Office
(660) 438-6697

St. Louis District
1222 Spruce St.
St. Louis, MO 63103-2833
(314) 331-8575

Little Rock District
P.O. Box 867
Little Rock, AR 72203
(501) 324-5296
Branson Field Office
P.O. Box 1109, Branson, MO 65615
(417) 334-4101

Memphis District
Clifford Davis Federal Building
Room B-202
Memphis, TN 38103-1894
(901) 544-3471

Rock Island District
Box 2004, Clock Tower Bldg.
Rock Island, IL 61204-2004
(309) 794-5370

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AIR QUALITY PERMITS

Quarrying and stone processing facilities generate dust, also called particulate matter, with diameter less than or equal to 10 micrometers. Regulators call this dust PM_{10}. PM_{10} can cause lung damage. A National Ambient Air Quality Standard (NAAQS) has been established to limit PM_{10} concentrations in the air and protect public health.

In Missouri, sources that could potentially emit large amounts of PM_{10} need a construction permit before building. This means that you will likely need a permit if you plan to start a new quarry and stone operation. Also, you may need a permit if you plan to make changes at your existing quarry and stone operation. To get a construction permit, you will need to send a completed application form to the agency which oversees the NAAQS in your area.

City of St. Louis
Division of Air Pollution Control
314-664-7877

St. Louis County
St. Louis County Dept. of Health
314-854-6951

City of Springfield
Air Pollution Control Authority
417-864-1662

Kansas City
Kansas City Health Department
Air Quality Section
816-822-0101

Elsewhere in Missouri
Missouri Dept. of Natural Resources
Air Pollution Control Program
573-751-4817

The application forms include an Application for Authority to Construct and an Emissions Inventory Questionnaire (EIQ). Information needed on these forms includes a drawing of the site layout, a listing of process equipment that will be used along with its manufacture date and serial number, and the rated design performance of the equipment. You will also need to report what you expect will be the annual rock production at the site.

The construction permit allows for construction of specified equipment at a specific site. You must not use different equipment or move the equipment to a different site unless you have the proper permits to do so. If you want to use equipment at more than one site and both sites have a permit, you must submit a Portable Source Relocation Request at least seven days before you plan to move the

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equipment. If you wish to move a piece of equipment from a permitted site to an unpermitted site, you must submit a construction permit application form and a Portable Source Relocation Request including maps of the new area at least 21 days before you plan to move the equipment.

Your permit will state how often you will need to submit emission data, fees and process information. It may be once every year or once every five years.

In addition to your construction permit, Missouri's regulations also require facilities to receive an operating permit. Operating permits are required if your facility has large potential emissions or if your facility is subject to a standard under section 111 of the Clean Air Act called New Source Performance Standards, NSPS. The NSPS for quarrying and stone processing falls under 40 CFR Part 60 Subpart OOO- Standards of Performance for Nonmetallic Minerals Processing Plants.

If you need help determining whether your operation needs a permit, or if you need help completing an application, contact TAP at (800) 361-4827.

REMEMBER

New and modified facilities need to obtain construction permits.

You are required to submit an EIQ along with an Authority to Construct form when applying for a construction permit.

A Portable Source Relocation Form must be submitted before moving equipment to a different site.

EIQ's are submitted annually or once every five years, depending on your potential emissions.

With some exceptions, you will need to obtain an Operating Permit for your facility.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

✓ Use water sprays or chemical suppressants to keep materials and roads wet, but use only enough water to dampen the material. Avoid having runoff.
✓ Limit drop heights of materials.
✓ Cover trucks.
✓ Enclose material at transfer points such as on conveyors and in screening operations.

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ANTIFREEZE

Antifreeze is usually made of ethylene glycol, corrosion inhibitors and foam controllers. Ethylene glycol is toxic if ingested. It can be particularly hazardous because animals and children may be attracted to its sweet flavor. If they drink the ethylene glycol it could cause coma or death. Some antifreeze is made of propylene glycol. This material is less hazardous to humans and animals than ethylene glycol.

The used antifreeze from a vehicle can hold contaminants that it has picked up from the vehicle engine. For example, used antifreeze may contain lead because the antifreeze has dissolved some of the lead solder in the radiator. Waste antifreeze is not a listed hazardous waste under the federal hazardous waste regulations, but it **may** be a hazardous waste depending on the contaminants it has picked up. The test used to find out if used antifreeze is a hazardous waste is called the Toxicity Characteristic Leaching Procedure (TCLP). See the guide sheet on hazardous waste for more information.

Recent studies have shown that antifreeze from cars and trucks manufactured after 1995 is not hazardous waste. This is primarily because less lead is used in radiator construction. Used antifreeze is more likely to be hazardous if it was used in heavy equipment such as bulldozers.

This means that the antifreeze from late-model cars and trucks at your operation that has not been mixed with other antifreeze or with other hazardous wastes does not need to be tested. You can assume that it is not hazardous and need not test it to prove that. However, the used antifreeze from heavy equipment or industrial sources will need to be tested to see if it is hazardous waste unless you have some other way of knowing that it is or is not hazardous. If you wish, you can assume the antifreeze from your heavy equipment is hazardous without testing it and dispose of it as hazardous waste.

There are several ways to safely and legally manage your used antifreeze:

✓ Recycle the antifreeze at your facility (on-site recycling).

✓ Send the antifreeze to someone else to either recycle or dispose of it (off-site recycling or disposal).

✓ Discharge to public wastewater treatment plant **<u>if</u>** the plant has approved the discharge.

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Recycling. The Missouri Department of Natural Resources (DNR) encourages antifreeze recycling. You can purchase or lease several types of antifreeze recycling equipment.

Recycling hazardous wastes on-site requires a type of approval from DNR called resource recovery certification. If you recycle antifreeze only from late-model cars and trucks, you do **NOT** need a resource recovery certification to recycle antifreeze on-site. If you want to recycle antifreeze from heavy equipment, you must get a resource recovery certification. Call DNR at (800) 361-4827 for more information.

Your recycling unit will create waste such as distillation residues and used filters. You must determine if these wastes are hazardous before disposal. See guide sheet #8, *Hazardous Wastes*, for more information. If the residue is nonhazardous, it can be sent to the landfill with your regular trash. However, liquids cannot go to the landfill.

There may be businesses that will bring equipment to your facility and recycle your antifreeze on-site. Again, if the antifreeze is from late model cars and trucks, these companies do not need resource recovery certification. If it is from heavy equipment, these companies will need resource recovery certification to recycle your antifreeze.

Off-site Recycling or Disposal. There are companies that pick up used antifreeze for off-site recycling or disposal. If your used antifreeze is a hazardous waste, the transporter must have a Missouri license to transport hazardous waste and the waste must have a hazardous waste manifest with it. Make sure the facility you send it to has a resource recovery certification or a hazardous waste treatment, storage and disposal permit.

Discharge to wastewater treatment plant (pouring it down the drain). If the drains at your facility go to a wastewater treatment plant (not a septic system), you MAY be able to pour antifreeze down the drain **IF** you have permission from the plant. Pouring something down the drain is called a discharge. Some plants will not allow discharges of used antifreeze. Large quantities can harm the treatment plant. Also, the wastewater treatment plant may not be able to remove all the contaminants from the used antifreeze. The contaminants then enter lakes, streams and rivers.

✓ **DO NOT** discharge antifreeze to a wastewater plant without permission.
✓ **DO NOT** discharge any hazardous waste, including antifreeze, to a septic system.
✓ **DO NOT** dispose of antifreeze in or on the ground, down storm drains or into streams or lakes.

POLLUTION PREVENTION

√ Make sure hoses, gaskets and seals are in good condition.
√ Replace antifreeze only when necessary.
√ When good antifreeze must be removed for repairs, save it and reuse it in the system.

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ENDANGERED SPECIES

Endangered species are plants or animals for which the prospect for survival of the species is in immediate jeopardy. There are laws to protect these species and, in some cases, their habitat. This means that some activities may not be allowed in areas where endangered species live. This may affect you if you are planning to expand operations or site a new quarry.

The Missouri Department of Conservation (MDC) is the agency responsible for collecting and managing information on the location and status of endangered species in the state. There are currently 306 species of plants and animals that are listed as State Endangered. The federal list includes 20 species found in Missouri.

The restrictions affecting you depend on whether the species is a plant or animal, whether the land is private property and whether you receive any federal funds. To contact MDC's Policy Coordination Section for general information, call (573) 751-4115.

The booklet, *Endangered Species in Missouri*, gives a general discussion of the topic of rare and endangered species. The annually updated *Rare and Endangered Species Checklist of Missouri* is a reference work listing all of the current plants and animals of concern and giving both the federal and Missouri status.

There may be times when you need to determine if there are endangered species on a property, such as when you are developing permit applications for a new or expanded site. To get an Environmental Review of a piece of property, send a request to MDC by mail. If there are no endangered species associated with the property, MDC will issue a letter stating so. Even if you are not required to have an Environmental Review for endangered species, you may wish to do so, particularly if you are planning to purchase property.

When contacting MDC, it is important to clearly identify the location of the property. The information should include as many of the following as possible: county, topographic quadrangle map designation (if known), legal description (section, township, range), acreage, permanent landmarks such as rivers and roads, and a copy of a map of suitable scale with the location of the

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property drawn in and labeled. The request should be sent to

Policy Coordination Section
Attn: Policy Coordinator
Missouri Department of Conservation
P.O. Box 180
Jefferson City, MO 65102-0180

Note: The state regulation dealing with endangered species is located in the *Missouri Code of Regulations* Title 3, Division 10, Section 4.111 (3 CSR 10-4.111).

REMEMBER

It is illegal to harm federally-listed endangered species or their habitat.

It is illegal to harm species that are listed in Section 4.111 of Missouri's Wildlife Code.

Contact the Missouri Department of Conservation for information on endangered species in Missouri.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can help to protect habitats. Here are some suggestions:

√ Learn more about rare and endangered species in your area of the state. Find out how you can improve habitat for them.

√ Properly design, construct and maintain detention basins to capture sediment. Sediment is a major pollutant of aquatic environments.

√ Revegetate disturbed areas as soon as possible and in accordance with your permit. Use native plants from a reputable source that provide food and cover for wildlife.

√ Avoid spilling oil, grease and gasoline during vehicle and equipment maintenance activities.

√ Maintain appropriate spill containment equipment and train employees on proper usage.

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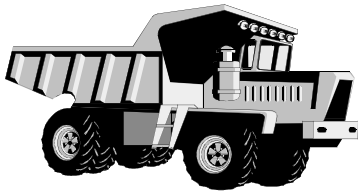
EPCRA and TIER II REPORTING



Many quarries store explosives and other hazardous materials. These materials can pose a serious risk to human health and the environment, particularly if you have a fire, flood or other emergency. Emergency responders are at particular risk if they respond to an emergency where these materials are stored.

In 1986, the federal government passed the Emergency Planning and Community Right-to-Know Act (EPCRA), sometimes called SARA Title III. Missouri also has its own Community Right-to-Know Law. These laws require states, communities and businesses to work together on emergency plans for accidental chemical releases, emergency notification procedures, toxic emissions reporting and compiling an inventory of hazardous chemicals for planning and public review.

Missouri's law has reporting requirements for explosives and blasting agents. It also requires markings on buildings, rooms and containers where hazardous chemicals are present. Markings are to conform with NFPA 704 standard.

In Missouri, EPCRA is administered by both the Missouri Department of Natural Resources (DNR) and the Missouri Department of Public Safety (DPS).

To comply with EPCRA you need to find out if you have a regulated material in a regulated quantity. You can contact either DNR or DPS to get a list of materials regulated under EPCRA. Depending on the type and quantity of material, you may need to

✔ Complete a Tier II Form.
✔ Designate a facility coordinator to work with the Local Emergency Planning Committee (LEPC).
✔ Notify DNR and the National Response Center if you have a release (spill).
✔ File a Form R.

Also, in Missouri you must inform the fire department within 24 hours if you have more than 100 pounds of explosives and blasting agents. If storage is longer than 15 days, you must report these substances to the fire department, LEPC and the Missouri Emergency Response Commission (MERC).

Tier II Forms
To get a list of substances that require a Tier II form and the threshold planning quantities, or to get a Tier II form and instructions, contact DPS at (800) 780-1014.

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You need to complete a Tier II if you have
✔ an extremely hazardous substance over the threshold planning quantity or over 500 pounds, whichever is lower, or
✔ more than 10,000 pounds of any hazardous chemicals for which a material safety data sheet (MSDS) is required under OSHA's Hazard Communication Standard.

If you need to submit a Tier II, you also must pay a fee. For rock quarries, the fee will typically be $100, plus $20 for each reported chemical over three. Most of this money is used to support local efforts to prevent and prepare for chemical hazards and for hazardous materials training.

The Tier II form with the fee is submitted yearly on March 1 to the MERC. You also must send copies of the Tier II form to your LEPC and the appropriate local fire department.

Facility Coordinator
If you have an extremely hazardous substance in amounts over the threshold planning quantity you must choose a person at your facility to work with the LEPC. This person will be the first emergency contact listed in the Tier II form.

Spill Notification
If you have a spill (release) of an extremely hazardous substance or hazardous substance in excess of the reportable quantity, you must call DNR at (573) 634-2436 **and** call 911 (or appropriate emergency response number), **and** call the National Response Center at (800) 424-8802. You also must follow up with a written report to the MERC and LEPC discussing the response measures taken and health information.

Form R
To get a list of toxic chemicals or a Form R, contact DNR at (800) 361-4827. You need to complete a Form R if your facility
✔ has an SIC (Standard Industrial Classification) Code that begins with the numbers 20-39
✔ has more than 10 employees, and
✔ manufactures, processes or otherwise uses certain toxic chemicals in excess of threshold quantities (25,000 or 10,000 pounds).

REMEMBER

If you have over 100 pounds of explosives and blasting agents, notify the fire department. If storage is longer than 15 days, notify the LEPC and MERC.

If you have 10,000 pounds of a chemical needing an MSDS under OSHA Hazard Communication Standard or if you have over 500 pounds (or the threshold planning quantity) of an extremely hazardous substance you must submit a completed Tier II form to the fire department, the LEPC and the MERC.

Even if you aren't required to, you should have an emergency plan at your facility and discuss it with your local emergency responders.

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HAZARDOUS WASTES

Some activities at your quarry may result in the generation of hazardous waste. It is very important that you determine if your wastes are hazardous and that you carefully follow the law when managing the wastes.

What is a Hazardous Waste?

A waste is a material you no longer use and will discard. It can be a solid, liquid or gas. A waste is hazardous if it has certain properties that could pose a danger to human health and the environment. Solvents and degreasers are examples of wastes that could be hazardous.

It is **your** responsibility to determine if your waste is hazardous. A waste is hazardous if
✔ It is listed as a hazardous waste in the federal regulations;
✔ It exhibits a hazardous characteristic;
✔ It is a hazardous waste by Missouri law; or
✔ It is a mixture of a listed hazardous waste and any other waste.

Listed Hazardous Waste - The federal government publishes lists of hazardous wastes. There are four different lists: The F list, the K list, the P list and the U list. Wastes that are on the P list are called "acutely hazardous" and are regulated more strictly than the others.

Characteristic Hazardous Waste - Some wastes that are not on the lists may still be regulated hazardous wastes because they have characteristics that make them hazardous. The four characteristics are

Ignitable - A waste with a flashpoint of less than 140 F, or solids that catch fire easily and burn so rapidly they create a hazard. Some solvents are ignitable.

Corrosive - A waste with a pH less than or equal to 2.0 or greater than or equal to 12.5. An example is battery acid.

Reactive - Wastes that are normally unstable, react violently with water, can explode or release poisonous gases.

Toxic - Wastes with high concentrations of volatile organic chemicals, heavy metals or pesticides when tested by the Toxicity Characteristic Leaching Procedure (TCLP).

Missouri-specific Hazardous Waste - An individual state can regulate wastes as hazardous even if they are not on the federal list. For example, in Missouri certain dioxin wastes are regulated at smaller quantities than in the federal rules.

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Mixed Waste - If you mix any waste with a waste that is on the F-, P-, K- o r U- lists, all of it is hazardous, even if there is a very small amount of listed waste.

Is Your Waste Hazardous? The Material Safety Data Sheet (MSDS) will often tell you whether your chemicals are regulated as hazardous waste. Your supplier should also be able to give you the information.

You need tofind out if the waste is on one of the lists of hazardous wastes or if it is a hazardous waste in Missouri. If it is not, you need to find out if it exhibits one or more of the hazardous characteristics. If you don't know if your waste is hazardous, you will need to have it tested in a laboratory. Contact the Technical Assistance Program (TAP) at (800) 361-4827 for help with this.

Managing Hazardous Wastes

There are very specific requirements for managing the hazardous waste from your business. The requirements you must meet depend on what and how much waste you generate. You need to know how much acutely hazardous waste (P-listed) and non-acute hazardous waste you generate each month. You also need to know how much of each of these types of waste you accumulate at any one time.

Use the following information to figure out what type of generator you are. Then contact TAP or another environmental professional to learn the specific requirements for managing your waste.

What Type of Generator Are You?

There are three types of generators -- Large Quantity Generator (LQG), Small Quantity Generator (SQG) and Conditionally Exempt Generator (CEG). Here are some general guidelines to help you decide what type of generator you are:

If you generate in one month or accumulate at any one time . . .

✔ more than 1 kg (2.2 pounds) of acutely hazardous waste you are a LQG.

✔ 1,000 kg (2,200 pounds) or more of non-acute hazardous waste you are a LQG.

✔ more than 100 kg (about 220 pounds), but less than 1,000 kg (2,200 pounds) of non-acute hazardous waste AND less than 1 kg of acutely hazardous waste you are a SQG.

✔ no more than 100 kg (220 pounds) of non-acute hazardous waste AND less than 1 kg of acutely hazardous waste you are a CEG.

✔ In Missouri, anyone generating 1 gram or more of dioxin waste (2,3,7,8-tetrachlorodibenzo-p-dioxin) is a LQG.

The federal requirements for hazardous waste can be found in the Code of Federal Regulations, Title 40, Part 260 through Part 280 (40 CFR 260-280). The Missouri Hazardous Waste Law is in the Revised Statutes of Missouri (RSMo), Sections 260.350-260.552. The hazardous waste rules are in the Code of State Regulations, Title 10, Division 25 (10 CSR 25).

For more information call (800) 361-4827 or write to
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Technical Assistance Program
P.O. Box 176
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LEAD-ACID BATTERIES

In this document the term "battery" means lead-acid battery.

Lead-acid batteries from motor vehicles contain materials that can pose a risk to people and the environment. These batteries contain sulfuric acid, lead and other materials that can be hazardous. Missouri's Solid and Hazardous Waste Management Laws have requirements for managing waste batteries.

It is against the law for anyone to dispose of lead-acid batteries in Missouri. You must send the batteries to a recycling facility, a resource recovery facility or a permitted lead smelter. Never put batteries in your trash or dumpster. Lead-acid batteries cannot go to a landfill and they cannot be burned.

If you store batteries, it must be in a way that protects human health and the environment. It is important to store batteries so that they do not crack or leak. Store the batteries indoors or under cover to keep them dry and prevent damage to the casings. Never store batteries near combustibles such as gasoline because of the risk of sparks caused by electrical discharge of the batteries.

Store batteries so that any leaking liquid will be caught. The liquid inside batteries is sulfuric acid and it may contain dissolved lead and cadmium. Be sure you have procedures for handling spills and/or leaking batteries.

Anyone handling batteries or spilled material should wear protective clothing and eyewear. If acid leaks out of the batteries, collect it and handle it as a hazardous waste. See the guide sheet on Hazardous Waste for more information.

If you store large quantities of batteries you may have more regulations to follow. If you store over 200 batteries, you may be subject to EPCRA requirements. See the guide sheet #7, *EPCRA and Tier II Reporting*, for more information.

Note: The part of the law dealing with lead-acid batteries is §260.260-260.266, *Revised Statutes of Missouri*.

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REMEMBER

Don't put batteries in the trash. Batteries must go to a recycling facility, a resource recovery facility or a permitted lead smelter. They cannot go to a landfill.

Battery acid may be a hazardous waste.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Store batteries where they will not be damaged or frozen.

√ Store batteries so that leaks will be caught and contained.

√ Anchor batteries when transporting.

√ Use long-life batteries.

√ Inspect stored batteries regularly so you can find cracks or leaks before they become a problem.

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Preventing Pollution at Rock Quarries - Guide Sheet #10

MINERAL EXPLORATION TEST HOLES

In the course of operating a quarry, or while exploring sites for new quarries, drilling of test holes is necessary to determine the size of the deposit. These test holes are considered wells and are regulated by the Department of Natural Resources' Division of Geology and Land Survey (DGLS). Wells can provide a path for pollutants to get into the groundwater, so it is important that they be properly sited, drilled and plugged.

All wells drilled to a depth of 10 feet or more in Missouri must be drilled by a person who has a permit from the DGLS. You should require that anyone drilling wells for you furnish proof of a current driller's permit. Permitted drillers should be familiar with the regulations, but you are responsible for making sure the regulations are followed at your facility. This document provides very general information to help you do this. If you need specific information on any of these topics, contact DGLS at (573) 368-2170 or call TAP at (800) 361-4827.

Test Hole Locations

There are some general requirements for locating test holes. They must be located where there is good surface drainage and, if possible, at higher elevation than potential sources of pollution. The location must allow the well and surrounding area to be kept in a sanitary condition. There must be proper drainage so no ponding or accumulation takes place within ten feet of the well. If possible, holes should be located in areas that do not flood.

In addition to these general requirements, there are specific setback requirements from certain potential sources of contamination. Chemical storage areas, landfills, lagoons, septic tanks and even roads could pose a risk to groundwater if test holes are located too close to them. The distance of the setback depends on the potential contaminant source and whether the well is cased.

Construction Standards

If permanent surface casing is set in the test hole, it must be set at least 50 feet into bedrock. Temporary surface casing lengths may be determined by the permitted well driller. When a hole is grouted, it must be with material and procedures approved by DGLS as explained in the regulations.

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Plugging Test Holes

Each test hole must be plugged within 60 days of completion unless it is converted to another use. The exception is where a test hole will be destroyed within a year by the advance of quarry operations. Then a temporary surface plug to prevent surface water from entering the hole may be used. If a test hole is drilled to a depth greater than the quarry floor it must be plugged from total depth to the quarry floor depth with grout, in addition to the temporary surface plug. If the test hole is not destroyed by quarrying within one year it must be plugged.

A landowner may request to convert a test hole to another type of well such as for a water supply or a heat pump. The request must be in writing to DGLS and provide information to show that the well meets all construction requirements for the type of well requested.

Test Hole Registration

A test hole registration form must be submitted to DGLS within 60 days of the completion of test hole plugging. Your permitted driller files this report, but you should be sure it is done. This report contains information on tops and thicknesses of formations, the type of rocks encountered in drilling and information on the construction of the test hole. Currently there is no fee required, however DGLS can, and may in the future, charge a registration fee of up to $15 for each hole registered. If the test hole was for quarry expansion and will be destroyed within one year by operations, the hole does not have to be reported.

By law, exploration test hole information is confidential for ten years. An additional five years of confidentiality may be granted upon written request by the operator.

REMEMBER

Anyone drilling test holes must have a permit from DGLS to do so.
There are regulations that specify where and how a test hole can a be placed.
The driller must submit a Registration Form to DGLS within 60 days of hole plugging.
Test holes must be properly plugged within 60 days of completion.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Properly siting and constructing test holes will help prevent contamination of the groundwater.
√ Do not use or store potential pollutants such as oil, gasoline, solvents, etc. near test holes.
√ Always properly plug all test holes or other wells to prevent groundwater pollution.

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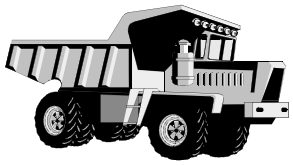
RECLAMATION



It is important for operators of rock quarries to begin reclaiming land as soon as an area has been mined. Prompt implementation of land reclamation activities such as regrading, replacement of top soil and revegetation will help prevent erosion and sedimentation.

Reclamation Permit

Rock quarry operators that began mining in Missouri on or after January 1, 1972, are required to apply for and obtain a permit from the Land Reclamation Commission. A packet containing application forms, instructions and supplemental information is available from the Land Reclamation Program.

To make sure funds will be available for reclamation, the operator is required to post a bond, payable to the state of Missouri.

The bond remains in effect until the Land Reclamation Commission approves the completed reclamation. A representative of the Land Reclamation Program will inspect the reclaimed areas. The Land Reclamation Commission will approve or disapprove the reclamation based on the inspection.

The operator is required to submit a mine operation and reclamation plan (mine plan) as part of the permit application. The mine plan describes the conditions of the areas to be mined, the methods of mining and the plans for reclamation. This mine plan should incorporate pollution prevention measures.

Your permit contains very important information about how to operate your quarry. Be sure that you read the permit very carefully and review it regularly. Also, make sure all employees with direct control over the operation of the mine know what is required in your permit and have a copy available to review at any time.

REMEMBER

If you began mining at your site on or after January 1, 1972, you must have a land reclamation permit.

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POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Walk the mine area frequently to identify areas needing repair from erosion. Correct areas with conditions that lead to erosion such as weak vegetation reestablishment, ground settling, poor drainage, failing structures and ground damage from equipment traffic.

√ Ensure availability of a mine employee to meet regularly with the state inspector to share ideas on improving the operation and reclamation at the mine.

√ Keep good records on reclamation work schedules and deadlines to ensure that adequate resources are available to complete the work on time. Plan for uncontrollable events such as equipment failure and inclement weather when developing work schedules.

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Preventing Pollution at Rock Quarries - Guide Sheet #12

PETROLEUM STORAGE TANKS

Some rock quarries have storage tanks containing oil or fuel. These tanks have the potential for leaking and spilling oil or fuel, causing harm to the environment. Storage tanks, depending on size, usage or type, are regulated by several agencies.

Aboveground Storage Tanks (ASTs)
Federal law requires you to have a Spill Prevention Control and Countermeasure (SPCC) Plan if you have an oil or used oil storage tank located where it could contaminate water with spilled oil, for example on or near a stream, lake or river. You also need a SPCC plan if you have
✔any single aboveground storage container with a capacity over 660 gallons,
✔aboveground aggregate storage capacity over 1320 gallons, or
✔ total underground storage capacity over 42,000 gallons.

The basic requirements of an SPCC plan include what you do to prevent spills, how you plan to contain any spills and how you plan to remove and dispose of the oil or fuel if you have a spill. Also, the storage tanks must be in a containment area. Aboveground petroleum product storage tanks at a service station or a bulk terminal are regulated by the Missouri Department of Agriculture. If your business includes these operations contact them at

Missouri Department of Agriculture
Division of Weights and Measures
P.O. Box 630
Jefferson City, MO 65102
(573) 751-4278

Underground Storage Tanks (USTs)
If you have an underground storage tank (UST) larger than 110 gallons, you must register that tank with the Missouri Department of Natural Resources (DNR) whether or not the tank is in use, unless the tank was taken out of service before January 1, 1974. There are requirements in Missouri for the way new tanks are to be constructed and installed. Existing tanks were required to meet these requirements or be properly closed by December 22, 1998. If you are planning to install a new UST, you must notify DNR at least 30 days before you use the tank. All USTs must have an approved method of release detection.

You must notify DNR by calling (573) 634-2436 as soon as possible within 24 hours of a suspected release from your UST. Spills and overfills must be immediately contained and cleaned up.

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If you plan to take your UST out of service temporarily or permanently, or if you want to use it for something besides petroleum products, contact the department for information on what you need to do.

Owners and operators of petroleum USTs must demonstrate financial responsibility for releases of products from the tanks. Several options are available for demonstrating financial responsibility. Missouri has a Petroleum Storage Tank Insurance Fund, which provides for cleanup of contamination from both AST and UST releases. Your tanks may be eligible for benefits from this fund.

REMEMBER

If you have an underground storage tank larger than 110 gallons you must register it with DNR even if it isn't being used.

If you store large quantities of oil or waste oil, you need a Spill Prevention Control and Countermeasure (SPCC) Plan.

Spills must be reported to DNR as soon as possible within 24 hours.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Prevent overfilling and spilling.

√ Label tank contents to prevent mixing.

√ Properly maintain tanks to prevent corrosion.

√ Place tanks where leaks can be easily contained without entering the environment.

√ Inspect tanks daily for leaks and spills.

√ Maintain appropriate spill containment equipment and train employees on proper usage.

√ Clean up spills as soon as possible.

√ Close out unused or out-of-service USTs in accordance with DNR regulations.

For more information call (800) 361-4827 or write to
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Preventing Pollution at Rock Quarries - Guide Sheet #13

USED OIL DISPOSAL AND RECYCLING

Improper disposal of used oil can harm the environment and result in costly cleanup. In Missouri, there are certain things you must do and certain things you cannot do when managing used oil from your business.

You cannot dispose of used oil at a landfill or with your regular trash. You cannot dispose of your used oil into the environment or create a public nuisance. You cannot use used oil for dust suppression or killing weeds on gravel roads, parking lots or elsewhere. You also cannot use it to start brush or trash fires.

Used oil is regulated under the federal and state hazardous waste laws and regulations. If you recycle your used oil, it is regulated under special used oil regulations. Recycled used oil includes oil that is re-refined, reclaimed, reprocessed or burned for energy recovery. If you do not recycle your used oil, it is regulated as a hazardous waste. The waste code for used oil in Missouri is DO98. See the guide sheet on Hazardous Waste.

Off-Site Shipments of Used Oil. Used oil must be hauled only by transporters who have EPA identification numbers and Missouri transporter licenses. Contact the Missouri Department of Natural Resources (DNR) for a list of transporters with Missouri licenses.

You can transport your own used oil if
✔ you transport 55 gallons or less.
✔ it is your own used oil or used oil from do-it-yourselfers or exempt farmers.
✔ you take the oil to a used oil collection center or used oil aggregation point.
✔ you use your own vehicle or an employee's vehicle.

Mixing other wastes with used oil. Be very careful what you mix with used oil. The regulations do allow mixing of certain ignitable hazardous waste with used oil if the mixture you end up with is not ignitable. However, if the waste is hazardous for some reason besides being ignitable (for example, if it's also a listed hazardous waste), mixing it with your used oil will make your used oil a hazardous waste. For example, mixing your F-listed spent solvents with used oil will cause all of the oil mixture to be hazardous waste. See guide sheet #8, *Hazardous Wastes*, for more information.

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On-Site Space Heaters. You may burn your own used oil, oil from do-it-yourselfers and oil from farmers who generate fewer than 25 gallons per month in specially-designed used oil space heaters. Used oil space heaters must have a capacity of 500,000 BTU per hour or less and be vented outside.

You do not need to notify DNR if you are burning used oil in this type of space heater, but you must notify DNR if you are collecting used oil from do-it-yourselfers or farmers. Contact DNR for more information on collecting used oil from others.

If you are a small quantity or large quantity generator of hazardous waste you cannot burn any mixture of used oil with hazardous waste in a used oil space heater. If you are a conditionally exempt generator of hazardous waste that is hazardous only because it is ignitable, you may mix it with your used oil for burning. However, this can damage the space heater and release hazardous emissions into the environment. Before adding anything to your used oil, check with your used oil transporter or used oil space heater manufacturer to make sure that practice is acceptable.

REMEMBER

You cannot send used oil to the landfill or pour it out onto the ground.

If you are not recycling your used oil, it is a hazardous waste.

If someone else is hauling your used oil, they must have an EPA identification number and be registered with DNR.

You may burn your own used oil in a used oil burner no larger than 500,000 BTU/hour that is properly vented.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Keep used oil separate from other wastes.

√ If you remove oil-laden parts, place them on a drip pan rather than the floor or ground.

√ Do not use the oil drip pan to collect antifreeze or solvent.

For more information call (800) 361-4827 or write to
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USED OIL STORAGE

Improper storage of used oil can increase the risk of spills and leaks that could harm the environment and prove costly to clean up. In Missouri, there are some legal requirements for storing used oil from your business.

If you store used oil, you must

✔ Label or mark the storage container(s) with the words "Used Oil."

✔ Keep containers in good condition.

✔ Store used oil collected from do-it-yourselfers no longer than 12 months.

✔ Keep containers closed if they are exposed to rain or snow (except when removing or adding used oil).

✔ Inspect storage areas regularly for leaks or spills.

✔ Fix leaking containers immediately or move the oil to another container.

Although you aren't required to, you may wish to put your used oil containers in a "secondary containment" structure to prevent spills and contamination. Secondary containment is the name used to describe a structure or container that holds the storage tank and can hold the liquid if the storage tank leaks. The secondary containment should have a volume at least 10 percent greater than the volume of the largest container inside of it.

If you are storing a large amount of oil (one tank over 660 gallons or a total of over 1320 gallons) you are required to have spill prevention measures. See guide sheet #12, *Petroleum Storage Tanks*, for more information.

Your community or county may have specific requirements for storing oil. Check with local authorities, particularly your fire department.

The Missouri Department of Natural Resources (DNR) recommends not storing used oil in underground tanks.

Storing containers on an impervious surface such as sealed or treated concrete helps contain spills and makes cleanup easier. Some shops store their used oil containers on pallets or slightly elevated in some way to make it easier to spot spills or leaks.

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Clean up any spills immediately. Petroleum spills, including oil, over 25 gallons from a storage tank must be reported to DNR. Petroleum spills from other sources must be reported if they are over 50 gallons. However, a petroleum spill into a waterway such as a river, stream, lake or creek must be reported to DNR no matter how small the spill.

(The legal requirements for used oil storage can be found in *10 CSR 25, Chapter 11 of the Missouri Code of State Regulation* and in the federal regulations, *40 CFR Part 279*.)

REMEMBER

Label or mark storage containers with the words "Used Oil" and keep them in good condition.

Inspect storage areas regularly. Fix leaks immediately or move the oil to another container.

If containers are exposed to rain, keep them closed except when adding or removing used oil.

Check with local authorities to learn if there are local requirements.

Oil spills of 25 gallons or more must be reported to DNR by calling (573) 634-2436.

POLLUTION PREVENTION OPTIONS

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Here are some suggestions:

√ Keep used oil separate from other wastes.

√ Have separate storage containers for antifreeze, solvents or other fluids that could accidentally be mixed with used oil.

√Use large drum funnels or fill tubes when filling used oil drums. Store funnels on a drip pan to collect dripping oil.

√ Clean spills on a floor with a rag or mop that can be wrung-out and reused. A biodegradable soap and water solution may be used to clean up oil sheens.

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WASTE TIRES

Tires that are too damaged or worn for use as vehicle tires are waste tires. Since 1990, the storage, hauling and disposal of waste tires have been regulated under Missouri's Solid Waste Management Law.

Storage. Waste tires must be stored in a way that does not cause pollution, health or nuisance problems. Since tires can collect water and create breeding grounds for mosquitoes, you should protect your storage area from rainwater or provide some other way to control mosquitoes. Tires may also pose a fire hazard, so they should always be stored away from ignition sources.

Store any tires intended for resale or retreading separately from waste tires. Tires intended for resale or retreading are not regulated as waste tires.

Anyone storing 25 to 499 tires is regulated as a waste tire collection center and must meet certain requirements. Anyone who stores 500 or more tires must have a permit from the Missouri Department of Natural Resources (DNR) as a waste tire site. Contact DNR for more information on these two activities.

Hauling. If you pay someone to haul away your waste tires, that person needs a permit from DNR. However, you or other employees from your business do not need a permit to haul tires generated from your business. The tires may be hauled to a waste tire processor, site or end user or to a landfill (if they are cut, chipped or shredded).

A tire hauler's permit is good for one year and only applies to the business or person to whom it is issued. Check the expiration date and name on the permit to be sure it is valid. To get the list of permitted waste tire haulers or check the permit status of a hauler who picks up tires at your quarry, contact DNR.

Recordkeeping. You should keep a record of how many tires are taken in and removed from your facility each month. Include the name of the hauler and the date the tires were removed. Recordkeeping forms are available from DNR.

Beneficial use. Sometimes a person wants a few waste tires for a home project. Individuals can haul their own waste tires for their own use. If someone wants to use over 100 tires, they need to get DNR approval. Using tires for erosion control is not a good idea. In Missouri, you are not allowed to place tires in waters of the state. This includes streams, rivers, gullies and wet-weather creeks (among other areas).

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Processing. Anyone who processes waste tires for a fee must hve a processing permit from DNR if more than 25 tires are on-site at any time. You do not need a permit to process tires generated from your own business. Processing includes shredding, cutting, chipping or otherwise altering the tires.

Disposal. Never burn tires in Missouri. Even in areas where home waste burning is allowed, burning tires is prohibited.

You cannot dispose of tires in a landfill unless the tire is cut up in three or more pieces or in half circumferentially (forming two circles). There are places to legally take your waste tires in Missouri. They usually charge a fee per tire and can accept whole tires. Contact DNR for a list of sites.

The department presently allows tires from large earth-moving equipment to be buried on-site in limestone quarries provided it does not cause pollution, a health hazard or a public nuisance. However, this practice is not encouraged. You should try to find alternative ways to manage these tires. There are facilities in Missouri who can process these tires. Contact DNR for a list.

Uses for waste tires. There are options for using waste tires rather than disposing of them. Waste tire chips can be used for many things such as mulch on playgrounds or as fuel in electrical power plants or cement kilns. Contact DNR for information on reuse and recycling options.

The legal requirements for waste tires can be found in §260.270-278, Revised Statutes of Missouri (RSMo) and in 10 CSR 80, Chapter 8 of the Code of State Regulations.

REMEMBER

Do not burn waste tires.

Waste tires cannot go to the landfill unless they are cut into three or more pieces or in half circumferentially (in two circles).

If you wish to store 25 or more waste tires, you must follow requirements for waste tire collection centers. Contact DNR for more information.

If you pay someone (other than an employee) to haul away your waste tires, that person needs a waste tire hauler permit from DNR..

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WASTEWATER

Rainwater that falls in and around a rock quarry can become contaminated with sediments, oil, grease and other materials. Runoff from product piles may also be caustic. If not properly managed, this contaminated water can harm the environment, pollute creeks and lakes, and even contaminate drinking water.

To prevent environmental and human health problems, the federal Clean Water Act requires that you have a permit if you wish to discharge water that has contamination in it. This permit is called a National Pollutant Discharge Elimination System (NPDES) permit. The Missouri Department of Natural Resources (DNR) issues these permits in Missouri where they are called Missouri State Operating Permits.

If you own or operate a rock quarry, you must apply for and obtain a Missouri State Operating Permit for storm water discharge. The requirements of the discharge permit are intended to minimize or prevent water pollution. You will need to sample and test water discharges from your operation as your permit requires.

The storm water permitting requirements are being handled in two ways: general and site specific permits.

General Permit

General permits are written to cover a group of facilities with similar discharges or processes. Individual facility operators must apply for a permit to be issued for their facilities. A general discharge permit has been issued for rock quarries. The general permit authorizes discharges of storm water, washwater and water from dewatering pumping from quarries. It does not authorize the use of soap or detergents in truck washing. If you want to discharge any wastewater not authorized in the general permit, you must apply for a site specific permit.

If you do other types of mining, mine sand and gravel, or produce concrete or asphalt, you will need to apply for other permits. The quarry general permit does not apply to these activities.

Site Specific Permit

A site specific permit takes into account the individual characteristics of the site and the storm water runoff. Even if you are eligible to apply for a general permit, you can apply for a site specific permit if you prefer. In some cases, DNR may require a site specific permit to better protect water quality.

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Rock quarries are required to have a permit. A general permit is available that may cover your facility. To apply for that Missouri State Operating Permit you will need to complete an application Form E and submit a location map and a fee to DNR. Permits are good for a period of five years. If an individual permit or other information is needed, the department will contact you.

REMEMBER

If you own or operate a rock quarry in Missouri, you must have a Missouri State Operating Permit for your storm water discharge.

Discharge only the types of wastewater your permit allows.

POLLUTION PREVENTION

Preventing pollution instead of treating or disposing of it can save money, protect the environment and reduce risk to people. Your permit may require certain pollution prevention practices or even a pollution prevention plan. Here are some suggestions:

√ Design, construct and maintain a detention basins to capture sediment.

√ Use interceptor dikes, swales or berms to direct storm water away from areas that are prone to erosion or to convey runoff to the detention basin.

√ Inspect and maintain the erosion prevention and sediment control structures to ensure their effectiveness.

√ Revegetate disturbed areas as soon as possible.

√ Prevent spills of oil, grease and gasoline in vehicle and equipment maintenance activities.

√ Maintain appropriate spill containment equipment and train employees how to use it.

√ Use mulches, geotextiles and other measures to prevent erosion.

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